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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/993,067 | 11/14/2001 | Kuo-Chen Lin | TS00-251 | 7217 |

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| EXAMINER |
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GOOD JOHNSON, MOTILEWA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2672 | 3 |

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

TS

Office Action Summary

Application No.

09/993,067

Applicant(s)

LIN ET AL.

Examiner

Motilewa A. Good-Johnson

Art Unit

2672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) ✓
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is responsive to the following communications: Application, filed 11/14/2001; IDS, paper #2, filed 01/31/2002.
2. Claims 1-20 are pending in this application. Claims 1, 8 and 12 are independent claims. No claims have yet been amended.
3. The present title of this application is "Method and Apparatus for Displaying Production Data for Improved Manufacturing Decision Making" (as originally filed).

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guerlain et al., U.S. Patent Number 6,587,108 B1, "Multivariable Process Matrix Display and Methods Regarding Same", class 345/440, 07/01/2003, filed 07/01/1999.

As per independent claim 1, a data processing and display method . . . comprising: uploading a first variable value . . . from a database; (Guerlain discloses a memory unit 54, i.e. database, which receives historical data reduce to trend display, col. 9, line 64 – col. 10, line 12) subtracting said first variable value . . . to obtain a first variable variance; display a first variable variance bar above a stage axis on a graphical display device . . . variance bar is non-filled if said first variable variance is positive . . . ; (Guerlain discloses displaying a bar with a set of high and low process limit values for a process variable and the bar being colored and hashed, col. 18, lines 43-63, figures 7A-7G) uploading a second variable value for said manufacturing stage from said database; (Guerlain discloses monitoring and manipulating one or more process variables to control a process performed by a process plant, col. 7, lines 1-6) subtracting said second variable value from a second target value . . . ; displaying a second variable value bar below said stage axis on said graphical display . . . non-filled; and displaying a second variable bar below said second variable value bar . . . if said second variable variance is positive . . . filled. (Guerlain discloses displaying the first upper end of a first bar representative of a hard high limit and a second end of a first bar as having a hard low limit for the limit values of one or more process variables, col. 19, line 64 – col. 19, line 15)

However, it is noted that Guerlain fails to disclose subtracting the first and second variable to obtain first and second variable variances.

Guerlain discloses setting engineering hard and low limits that reflect the difference in the operator settings, col. 17, lines 45-57.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include subtraction to reflect the difference in the operator settings.

With respect to dependent claim 2, first variable comprises a work-in-progress (WIP).

However, it is noted that Guerlain fails to disclose the first variable as a work-in-progress.

Guerlain discloses the process variables are representative of plant components for performing a plant process or portion of a plant process, col. 7, lines 7-15.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a variable as a work-in-progress because work-in-progress are variables representative of a semiconductor plant operation.

With respect to dependent claim 3, second variable comprises production moves.

However, it is noted that Guerlain fails to disclose second variable as production moves.

Guerlain discloses one or more variables used to represent one or more plant components.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize production moves for representation of a semiconductor plant operation.

With respect to dependent claim 4, filled bars comprise any of the group of: color filled, texture filled, and gray-scale filled. (Guerlain discloses dashed lines, or color, col. 20, lines 30-41 may represent bars, see also figures 7A-7G)

With respect to dependent claim 5, manufacturing process comprises integrated circuit manufacturing.

However it is noted that Guerlain fails to disclose integrated circuit manufacturing.

Guerlain discloses process controls are used in manufacturing industries, col. 1, lines 37-40.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include integrated circuit manufacturing because integrated circuit manufacturing use process controls.

With respect to dependent claim 6, displaying said first variable, said first variable variance, said second variable, and said second variable variance for said stage as text data on a graphical display device. (Guerlain discloses displaying the first upper end of a first bar representative of a hard high limit and a second end of a first bar as having a hard low limit and displaying texture field for the limit values of the process variable, col. 19, line 64 – col. 19, line 15)

With respect to dependent claim 7, display a sub-category bar above said first variance bar . . . comprises an amount of said first variable within a defined sub-category . . . filled. (Guerlain discloses the hashed regions, i.e. filled region, representative of the upper high limit are used to graphical display a target optimization value, col. 19, lines 16-32)

As per independent claim 8 and dependent claims 9-11, they are rejected based upon similar rational as above claims 5, 4, 6 and 7 respectively.

As per independent claim 12 and dependent claim 13, they are rejected based upon similar rational as above independent claim 1. Guerlain further discloses a CPU, figure 1, element 52 (means of uploading from a database); a memory, figure 1, element 54 (means of storing); data analysis module, figure 1, element 72 (means for calculating) and a display, figure 1, element 58 (a graphical display means).

With respect to dependent claims 14-18 and 20, they are rejected based upon similar rational as above dependent claims 2-7 respectively.

With respect to dependent claim 19, text data is displayed in response to a user input device. (Guerlain discloses users can make changes to the limits by the textual fields, col. 19, lines 52-58)

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6,230,068 B1 Wu et al. 700/121 05/08/2001 04/21/1998

Visualizing methods for dispatch and diagnosis of finite machines for semiconductor's manufacturing.

5,559,710 Shahraray et al. 700/100 09/24/1996

Apparatus for control and evaluation of pending jobs in a factory.

Hussaini, *Simple Bar Graph Displays for Control Variables and Alarm Status*, Electro/94 International Conference Proceedings, Combined Volumes, 10-12 May 1994
Page(s): 651 –656.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Motilewa A. Good-Johnson whose telephone number is (703) 305-3939. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

mgj

Motilewa A. Good-Johnson
Examiner
Art Unit 2672


MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600